California Regional Water Quality Control Board
Central Valley Region
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21 September 2009

Mr. Dan Madden
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City of Turlock
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CERTIFIED MAIL NO.
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MODIFICATION OF PROPOSED WASTE DISCHARGE REQUIREMENTS (NPDES NO. CA0078948), CITY OF TURLOCK WATER QUALITY CONTROL FACILITY, STANISLAUS COUNTY

Central Valley Regional Water Quality Control Board (Central Valley Water Board) staff has modified the reasonable potential analysis (RPA) based on a correction related to the hardness-dependent California Toxics Rule (CTR) metals criteria for the above mentioned proposed waste discharge requirements (proposed NPDES Permit). As required in the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP), the proposed RPA for the CTR metals has been modified to use the minimum observed upstream receiving water hardness to adjust the applicable CTR metals criteria for discharges to the San Joaquin River. The correction results in reasonable potential for zinc to cause or contribute to an in-stream exceedance of the CTR criteria for zinc in the receiving water. Consequently, the correction adds water quality based effluent limitations (WQBELs) for zinc for the discharge to the San Joaquin River to the proposed NPDES Permit.

The proposed NPDES Permit was modified in section IV.B.1.a, Table 7, of the Limitations and Discharge Specifications, and the Fact Sheet, Attachment F, at section IV.C.3.ee. as shown in the newly proposed text below:

Limitations and Discharge Specifications, Sections IV.B.1, Table 7

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Zinc, Total Recoverable	µg/L	81	--	106	--	--

Fact Sheet, Attachment F, Section IV.C.3.ee

ee. **Zinc.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for zinc. The criteria for zinc are presented in dissolved concentrations. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. The conversion factors for zinc in freshwater are 0.978 for the acute criteria and 0.986 for the chronic criteria.

Section 1.3 of the SIP contains requirements for conducting the RPA for CTR constituents. Step 1 of the RPA requires that CTR criteria be adjusted for hardness, as applicable. As discussed in section IV.C.2.c of this Fact Sheet, receiving water hardness data is not available for Harding Drain. Therefore, to determine reasonable potential for zinc in discharges to Harding Drain, aquatic life criteria were developed using the default conversion factors, site-specific metals translators as described in IV.C.2.d, and the lowest observed hardness of the effluent of 89 mg/L (as $CaCO_3$). The applicable chronic criterion (maximum 4-day average concentration) is 111 µg/L and the applicable acute criterion (maximum 1-hour average concentration) is 106 µg/L, as total concentrations. The MEC for total zinc was 62.9 µg/L, based on 31 samples collected between October 2006 and April 2008 and reported in the Discharger's SMRs and Metals Translator Report. The maximum observed upstream receiving water total zinc concentration in Harding Drain was 80 µg/L, based on six samples collected between May 2005 and April 2008. Therefore, zinc in the discharge to Harding Drain does not exhibit the reasonable potential to exceed water quality criteria for zinc.

The upstream receiving water hardness in the San Joaquin River ranged from 32 mg/L to 345 mg/L, based on 20 samples from May 2006 to April 2007. Therefore, to determine reasonable potential for zinc in discharges to the San Joaquin River, aquatic life criteria were developed using the default conversion factors, site-specific metals translators as described in section IV.C.2.d, and the minimum observed upstream receiving water hardness of 32 mg/L (as $CaCO_3$). The applicable acute (1-hour average) criterion is 48 µg/L and the applicable chronic (4-day average) criterion is 50 µg/L, as total recoverable. The maximum observed upstream receiving water total zinc concentration in the San Joaquin River was 12 µg/L, based on 26 samples collected between May 2005 and April 2008. Because the MEC of 62.9 µg/L exceeds the applicable acute criterion of 48 µg/L for discharges to the San Joaquin River, zinc in the discharge to the San Joaquin River exhibits reasonable potential to exceed water quality criteria.

As described in section IV.C.2.b of the Fact Sheet, the ECA_{acute} and $ECA_{chronic}$ were determined using the minimum observed effluent hardness, which is protective under all discharge and mixing conditions. As also described in section IV.C.2.d of the Fact Sheet, the Regional Water Board has applied site-specific translators for zinc. This results in an ECA_{acute} and an $ECA_{chronic}$ for zinc of 106 µg/L and 111 µg/L, respectively. Using the procedures for calculating WQBELs in section 1.4 of the SIP, an AMEL and MDEL for total zinc of 81 µg/L and 106 µg/L, respectively, are included in this Order based on CTR criteria for the protection of freshwater aquatic life for discharges to the San Joaquin River (see Attachment F, Table F-25 for WQBEL calculations).

The MEC for zinc of 62.9 µg/L indicates that the Discharger can immediately comply with these limitations.

The proposed NPDES Permit is scheduled for consideration of adoption at the 9/10/11 December 2009 Central Valley Water Board hearing. Although the public comment period on this item has closed, Central Valley Water Board staff will accept written comments on the above changes only, until 5:00 p.m. on **21 October 2009**.

Anyone having questions on this change, or on the proposed NPDES Permit should contact Mr. Jim Marshall at (916) 464-4772 or jdmarshall@waterboards.ca.gov.

Diana Messina, Chief
Point Source Permitting Section

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US Army Corp of Engineers, Sacramento
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Mr. Phil Isorena, State Water Resources Control Board, Sacramento
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